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## Original Articles.

### CARDIO-VASCULAR-RENAL REGULATION

#### REMARKS ON CERTAIN PRACTICAL DEVICES OR PROCESSES USEFUL FOR THE CONSERVATION AND RECONSTRUCTION OF CARDIOPATHIC PATIENTS.


BY J. MADISON TAYLOR, A.B., M.D., PHILADELPHIA, PA.,

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No greater welfare service could be rendered to human-kind than to popularize the leading facts about prevention, relief, and rational cure of diseases of the heart and its associated structures, and especally by their effects. Attention can be directed here only to a few of the more graphic points and resources, leaving to better men the task of carrying on. It is of prime importance for the public and the profession to realize how much radical help can be afforded in both prevention and restoration by means other than drugs, by agencies applied to the exterior as well as by wisely regulated conduct—all of which can be done in full harmony with one's ordinary scheme of life, and is likewise entirely agreeable. To master this one department of physical welfare will go far toward naking the largest contribution of life, liberty, and the confident pursuit of happiness.

The maintenance of health and often of life rests squarely on the integrity of this one group of organs, heart, blood vessels, and kidneys, with their immediate correlates, the digestive, metabolic and respiratory group. They can be kept in order by the simplest and sanest of precautions and self regulations. When death does occur, no matter what be the outstanding malady, it is due to giving way of weak spots in the cardio-vascular cycle. Hence, while conservative measures and rational procedures are usually sufficient, proper medicines may be, and often are, required but only when early and essential precautions have been omitted. Their use at any time becomes a mere stop gap.

The fact is that diseases of the heart and vessels have been shown statistically to be steadily on the increase in the United States,* while this proportion is lessening in the older communities. We assuredly need arousing to the urgency of greater precautions. We are facing here the crux of human economies.

Most intelligent people, as well as many physicians, still regard the blood pump and its distributing channels as capable of taking care of themselves, as needing no direction until something serious happens to impair their integrity. This may be a partial truth, but much

* The mortality statistics for 1917 (Census Bureau) state: In registration area of Continental U. S., rate per 100,000: Heart diseases (1st), 153; Bright's disease and nephritis (4th), 107.4; arterial diseases (8th), 79.

more is needed, and can be readily impressed upon the patient by any competent clinician.

Just so soon as mankind, including some older members of the profession, come to visualize the circulatory cycle in full perspective, mortality statistics can be reduced materially. The poet creates a gloomy view who states that "our hearts like muffled drums are beating, funeral marches to the grave."

Mankind is so constituted as rather to welcome destruction than to undergo the exertion of substituting a rational for a symbolic or rankly optimistic or a *laissez aller* view. Many prefer to "acquire merit" by disregarding perils and thus fulfill the law of Mother Eddy and "leap before they look," as Richard C. Cabot says.

Fortunately some sense of caution comes at or near the halfway house of life, when perils to circulation most commonly arise. At that epoch there is demanded the pursuit of *vigilant personal hygiene*. When actual danger signals are inferred or estimated, there is no warranty for despair. All that is needed is a more rational revision of behavior, the formation of conservative habits whereby confidence shall be established, also mutual compacts and their observances.

### USEFUL AGENCIES FOR INFLUENCING BLOOD AND LYMPH PROPULSION, HENCE CARDIO-VASCULAR STABILIZATION.

The worst leaks in survival values occur through damage to the blood vascular system. Any or all agencies capable of checking or stopping these leaks should be faithfully tried out, scrutinized, verified, and applied promptly and consistently. Openminded attention to promising remedies is an index of common sense. The final test is experience.

The resources of medication, large as they are, must have limitations. These limitations in grave exigencies impress us with a despairing sense of inadequacy. Moreover, instances are met of vast harm wrought by lack of wisdom in the manner of their use. This harm is occasionally fatal. Fatalities from medication are, however, not confined to misuse, but to fatuous confidence in them which fails to be justified.

Never did this scientific groping so impress me as during the recent epidemic of influenza. I was guilty myself. The guilt of others, however, struck me often with even greater force. Perhaps the fatal cases were hopeless when met. Perhaps we groped in a slough of ignorance. A larger proportion died than was justified. Not one swallow, nor one thousand swallows, makes a summer, but when a clinician succeeds by luck in having a far lower mortality than his colleagues, he is to be pardoned for inferring his methods had merit.

In justifying confidence in the measures here advocated, let me cite in evidence the fact that while I used much the same heart medicines, though in colossal doses, as the best colleagues, my own taste was for relying on every rational, (physical or bio-kinetic) instrumentality which promised to fortify the individual, as well as do the utmost to combat the disease by drugs.

Whereas sharing equally with most of these colleagues grave doubts as to the efficacy of some standard drugs in fullest dosage, also graver doubts as to the by-effects of those drugs, I am absolutely certain that the remedial procedures, reconstructive or bio-kinetic measures employed, did no harm if they perchance did no good. So much for squaring the account with my conscience.

I postulate that: in striving to accomplish equilibration of the regulative energies in the cardio-vascular cycle, vastly greater safety resides in agencies exerted from outside, by attempts at influencing reflex response, vaso-constriction, also eliciting vagogenic and sympathetic helpfulness, readily applied and released, than by introducing drugs into the economy which may keep on doing what they should not do, or fail to do what faith in the power of the unseen hopes they will do but don't.

I postulate further that: in the face of failures of drugs admitted candidly by such men as Victor H. Vaughan and a host of other authorities who relied largely on medication, or serum therapy, it is our duty to turn our attention to regulation applied upon the organism from without.

Matters of common procedure, notably those implicated in legend, in symbolism, in ancient authority, in the common experience of domestic gropings, in short, home remedies, good nursing and the like, however fortified by experience but not by scientific studies, are proverbially those which least attract research workers. About them cluster, therefore, the widest divergencies of opinion as to principles of action, inducing cloudiness as to their force, fullness, or

efficacy, hence a disproportion of confidence fading off into preferential beliefs.

Those facts of which every one is cognizant remain in a state of perpetual flux, with currents setting from anywhere to nowhere.

I further postulate that when these humble, seemingly simple and inadequate doings, efforts at stabilization, though bio-kinetic instrumentalities, shall be scrutinized with the same thoroughness and scientific zeal as are the givings of the pharmacodynamists, we shall succeed better and our patients survive longer.

Cardio-vascular-renal propositions are *au fond* significant instances of bio-hydraulic equilibration. Until we get this concept firmly planted in the student's mind he is in danger of cherishing disproportionate confidence in the so-called "physiologic action" of drugs to the exclusion of the equally significant physiogenic factors in the problem based on bio-physics, not only cardio-vascular-renal disorders *per se*, but the nutrition of those structures and also of the nutrition, metabolism, of correlated structures, and of the organism as a totality contributory to reflex stabilization.

One factor impressing me as deeply significant is the function of the vaso-vasorum. Deteriorations of, or beginnings of degeneration in, the arterial walls must depend, in great measure, upon functional competence in these nutrient vessels of the vessels. An important item in nutrition of the arterial trunks is normality of the elasticity, pliancy, and adequate functioning of the muscle masses, described by some physiologists as "the great oxygenating laboratories." Action, reaction, and interaction of the neuromuscular mechanisms conditions the integrity of the circulatory fluids, of the cells, and hence of all the finer processes of metabolism. Whatever helps action of the nutrient vessels of the vessels, makes for the nutrition of the vessels of these arteries.

Hence the first desideratum (in subacute or chronic disabilities or disorders or their effects) is completeness, or adequacy of muscular action, active or passive. Upon the adequate functioning of the muscles depends those needful compressions and relaxations of the arteries whereby suction and expression is exerted upon the vaso-vasorum. How otherwise can these minute and yet highly important organs escape deterioration?

The effects desired are thus enhanced, or at least ample distribution of nutrient fluids and their return is secured; also adequate flow maintained through the organs of elimination. Where there occur stagnations, congestions, waterlogging in localized areas, something more is often needed than can be achieved by amplifying interaction by means of medicaments, even preparations of those most influential principles, the blood glandular or hemadenogenic organs.*

Among the regulative agencies exerted from without, and helpful in restoring hydrostatic equilibrium, are coarser movements, muscular actions, and the finer aggregations of applied motion, passive or made upon the subject, in their diversified manifestations (bio-kinetics), and among the means available are these:

*Pressure*, compression and relaxation, the natural full action of muscle masses upon tubular and spherical organs and structures: also the respiratory mechanisms, the lungs through their moveable structures, diaphragm, and external muscles and the like. Also consciously performed, regulated breathing acts thus often prove of definite efficacy.

Likewise the *artificial* and *extraneous* compressions and relaxation (manual, manipulative, and other) whereby pumping action, current flow, is expedited by acts done upon the parts.

Also particularized pressures, compressions, concussions, and other agencies for eliciting fuller *reflex action and reaction*, such as can conveniently and compellingly influence the spinal vasomotor, vagogenic reflex ares, etc., exerted upon areas adjoining nerve centers, subcenters, paravertebral structures, at or near points of exit, of *rami communicantes*, also nerves in continuity. This subject has been elaborated carefully by Albert Abrams.

These reflex effects, reflexo-genic influences, are capable of being exerted satisfactorily by the simplest of agencies, the hand, the finger tips alone, or one reinforcing the other, by suction, by impacts, by concussion, by a mallet upon a mass of firm rubber (like an eraser) exerting powerful and controllable push and pull phenomena; also by posture, attitude, gravity, by belts, corsets, rubber tissue, Z. O. plaster straps; likewise by thermogenic agencies, heat and cold, local or general, muscular movement to the point of "warming up," and by rest, by skin friction, subdermal traction exerted at the point of induced hyperemia, by encircling bands, etc.;

* For a masterly presentation of "The Effects of Exercise on the Blood," see P. B. Hawk, Am. Jour. Physiology, Vol. x, p. 384; also Snreider and Haven, *ibid.*, Vol. x, p. 239, 1915.

also by colon irrigations, by venesection, by centrifugation of fingers (whirling the arms).

Among reliable thermogenic devices are remedial baths, hydrotherapy, packs, hot and cold compresses, Turkish baths (dry heat), Russian baths (steam heat), the superheated dry air devices of Tyrnnauer, up to 300° F, electric light cabinets, violet ray, Alpine sun lamps (the Negelschmidt or Kromyer quartz lamps).

Cold deserves much attention, especially cold and wet compresses. Dry cold is capable of checking abscess formation and is a means of retarding pus and various disorders of stagnation or local injury.

An efficient and reliable field of relief and cure not yet systematized is that of pressures exerted on the paravertebral tissues by finger tips whereby vasomotor and viscero-motor effects are induced (through vaso-constriction chiefly). Various movements elicit gravity and muscular and hydraulic compression, *i.e.*, attitude (or postures) to induce changes in interrelationships of viscera and blood vessels, as Trendelenburg and Fowler positions, knee-chest posture, head hanging to check hemorrhage or to empty bronchi, and centrifugation by whirling the arms to induce hyperemia in fingers by driving blood to finger tips. Certain attitudes and special movements induce compressing action between internal and external muscles, *e.g.*, psoas and abdominal parietes in enteroptosis, stagnation, prostatism, etc.

Regulated or educational exercises, passive, active, and free, accomplish good results by activating the pumping action of the heart and muscle masses. Belts are also useful here to constrict splanchnic bloodvessels, to induce counter-pressure, hence blood distribution; also to arrest hemorrhage, *e.g.*, Momberg's, Longstreth's, Kilmer's, Dawbarn's, Achilles Rose's, etc.; also the familiar tourniquet, or rubber bandage, or encircling tube, (*e.g.*, constriction of the neck in seasickness by an elastic band with hooks and eyes around the neck). Rhythmic compression of the heart in apparently moribund states is an important mechanical life-saving agency. Another device is resting the veins by raising the legs higher than the hips.

In cases of high fever, of cerebral excitement, when fear, or antagonism to cold water exists, use a sprinkler with tepid water on the back, the patient lying face down. Begin with warm water, 85° to 100° F., and gradually cool to 75° to 70°. This will rouse from stupor or allay delirium, is also of great value in distresses accompanying many chronic states, high blood pressure, arthritides, gouty exacerbations, stagnations and other disturbances of metabolic equilibrium. Alternate hot and cold douches with greater force of impact from a hose or tube in a warm bathroom are useful to stimulate sluggish local circulation. Colon irrigation is a hydrotherapeutic and vascular regulative of great use to unload the bowels of putrefactive matter and toxic mucus. And also as an emphatic diuretic (see Martin H. Fisher's "Alkaline Irrigation for Nephritis," etc.). The temperature should be below that of the body, about 90° to 80°, to induce evacuations; to soothe spasm it should be hot, 105° to 120°; to induce diuresis any temperature will do, the best being cool, 80° to 75°. All are useful in fevers, acute internal diseases, cardiovascular renal diseases, arthritis deformans, acne vulgaris, pruritus ani, eczema of the rectal surfaces, etc.

Superheated air is of wide applicability (*vide* Tyrnnauer), though less used than it should be. This is true also of induced or reflected heat from electric lights, white and blue; also "leucodescent lamps." Less well known are the effects of centrifugation, or whirling the arms to drive blood forcefully to the finger tips and joints of hand and wrist. This is my own device, and it is found most useful to enhance sluggish circulation in the extremities; to enhance phagocytosis in gouty joints, in local inflammations, septic and other; to relieve interphalangeal rigidities and to aid in cure of angiotropho-neuroses, "wax finger," Raynaud's disease, effects of trench foot. Skin friction compels surface distribution of blood.

Venesection is particularly useful in uremia, coma, and vascular overtension, and when the blood is vitiated and viscous as in cerebral hemorrhage. Local freezing (Albert Abrams) over spinal centers forcefully affects disorders of the spinal centers shown at periphery. In neuritis of the arms, spasm, pain from fibromyositis, and in herpes zoster, freeze over the fourth and fifth thoracic vertebrae. Concussion on certain points, as the seventh cervical or other vertebrae, enhancing or depressing vagus tone is most valuable in a variety of conditions of loss of vagotonicity, notably in aneurysm of arch of the aorta, angina pectoris, exophthalmic goitre, etc. (See Abrams' book, "Spondylotherapy".)

Let me cite an impressive experience. A vig-

orous gentleman of 75 years came to my office about twenty years ago, who manufactured and sold a "kidney belt." He told me he had cured himself of chronic Bright's disease, citing his physicians and history. He accepted only clients who could prove they were real renal victims. The price was $300.00, but unless the owner obligated himself to carry out the instructions, he was penalized by "having the belt taken away."

These instructions consisted of excellent minute supplemental measures (bio-kinetic), among which were vigorous dry skin friction, on rising and retiring, not less than half an hour at a time, to be followed by innunctions of olive oil. He also sold them the brush and the oil. Likewise he insisted upon a particularized dietary, and certain exercises, chiefly to achieve pliancy, uniformity, and completeness of all normal movements.

Several of his patients came to me for varied reasons. They were mostly middle aged or elderly nephropathics. The condition of their skin was really remarkable for tone, color, elasticity, and temperature. Let me urge that such sound and effective instructions be imitated.

The chief reasons for or explanation of induced reactions on circulation are somewhat thus:

Every mechanical stimulus awakens reactions on the circulatory mechanisms. In health, or in one not extensively disturbed or deranged, reactions to stimuli are promptly followed by equilibrium and no harm is done. When the organism as a whole is thrown out of gear, one or more of the local regulative nervous mechanisms fail to do their full duty.

It is a matter of common knowledge that it is entirely possible to stimulate the periphery so as to aid in regulating the disturbed circulatory mechanisms—*e.g.*, the effects of a mustard plaster (*vide* Sir Lauder Brunton "Pharmacology"). Also the familiar effects of heat, of cold, of rest, of impacts, etc. It is equally well established, but not so commonly realized and only rarely employed, that when the right sort of stimulus is applied to or near subcenters, as over the plexuses, the nerves in continuity, effects can be produced, actions enhanced, in accord with function and in directions desired.

"An Important Factor in Circulation," the title of an article by the late Achilles Rose (April 20, 1911, New York Academy of Medicine) consists of the mechanical forces of the body which distribute blood and other fluids; (*a*) as blood and lymph in vessels; (*b*) as tissue juices, and (*c*) in constituting the most important part of the cells. A common feature is that they may be mechanically dilated or compressed and that they are also dilated and compressed of their own force. The task of moving water devolves upon the heart, hence the need to meet this by adjusting the resistance. In order to equalize gravity the *nervi irrigentes* come into play. They dilate the veins, creating vascular dilatation and thus induce a vacuum, hence cause suction. The heart thus acts as a suction pump through hydraulic action through the veins. He emphasizes the fact that relaxed tissues absorb fluid more readily, hence the efficacy of abdominal support by belts, and the like.

## SUMMARY

The objective considered in repairing cardio-vascular-renal disorder and so much of the structures involved as are remediable, is to restore equilibrium in regulative forces acting within through application of suitable agencies from without.

The possibilities are of the best provided the enterprise is begun early enough. This, however, being seldom practicable, the probabilities are vastly better at any period than is generally appreciated. Hence the value of visualizing them, of surveying our resources frequently, of making use of those applicable in the instance, and of faithfully appraising our experience.

No one has a right to condemn, deprecate, or deny efficacy to reputable measures until he has honestly and adequately subjected them to fair trial under fair conditions. In the immediate future much revision of bio-kinetic therapeutic measures must come about, and to the vast advantage of medical potential. The process under consideration includes the education of the creature to adapt itself not only to the ordinary exigencies of environment, to varied stimuli or irritations, but especially to recover poise after encountering extraordinary exigencies, new, strange, even adverse situations.

The mechanisms notably involved are the reflexes, the spinal, sympathetic, vegetative, autonomic in all their complex implications and means whereby they can be utilized in the process of readjustment and stabilization. Also the great regulators of these, the ductless or blood (hemadogenic or endocrine) glands which, as Sajous has so clearly and convincingly demon-

strated, play the major rôle in stabilization, in particular of the blood, bloodvessels, lymph channels and their contents.

The elemental forces acting from within, which are thus subject to influences exerted from without, are, first of all, motion and heat. Thermodynamics and motor-dynamics in the form of bio-kinetics. Of these bio-kinetic means or agencies we have presented memoranda of some of the more usable or applicable forms.

We may then pass in review a crude schema of manifestations of cellular energies thus:

1. *Psychodynamics*, the "power of thought," the "primal urge," elan vital, or as the Freudians delight to call the whole push, "libido," phases of which may be categoried as the affective functions, behavior, feelings, emotions, promptings, trends, tropisms and the like phases, all of which must be reckoned with as factors in cardio-vascular equilibration. Fear, anxiety, worry, doubt, self-pity, form the crux of most diseases of mind and also of body as Boris Sidis has convincingly shown in his book, "Causation and Treatment of Psychopathic Maladies," 1916.

Every clinician is, at least, aware of the subtlety and surprisingness of emotionalism as a factor in disorder or repair. Moreover, unless he learns to inculcate and guide the factors of conscious control, either the case remains *in statu quo ante* or passes from bad to worse, and by reason of this factor alone no matter what cunning combination of drugs is invoked.

2. *Physico-dynamics* or Bio-Kinetics, the potentialities which reside in, and are manifested by physics, from ponderability, gravity, hydraulics, pneumatics, thermogenics, photogenics, electrogenics, all the way to the simplest adaptations. Here we have the familiar but too often unclearly comprehended domain of heat and cold, actuation and inhibition, the "changing play of light and shade," of color, odor, taste, or attraction, repulsion, and the innumerable stimuli or stresses or overbalancing instrumentalities of environment.

Within this gambit are many bio-kinetic resources, some admirably elaborated and some as yet only inferred or hoped for, but which will evolve. Under photodynamics we need merely mention a few points lying chiefly among direct sunlight (heliotherapy), electrodynamics, especially the violet rays, which are equivalent to filtered or modified sun rays.

Under pondero-dynamics we may include all such forces as have to do causally with weight, either as a cause for harm, *e.g.*, drag, strain, direct and indirect, also torsion of arterial trunks or of limbs, etc. Also traction, suspension or the converse support, release of pull, traction or torsion or relief from compression of weight, *e.g.*, fluids in over-relaxed intestines or compressions exerted for a physiologic purpose, *e.g.*, Biers' method of compression of arterial trunks; also suction hyperemia; also support, by apparatus, belts, cuirasses, to raise the abdominal contents, to aid splanchnic circulation, and to hold them in favorable conditions for functioning; also posture (or rather attitude) carefully adjusted, *e.g.*, Trendelenberg, head hanging, "resting the veins" of the legs by raising the feet an inch or two or a foot or two, higher than the buttocks, etc. Dr. Morris Longstreth devised and used with immense success a belt I have described and used for 25 years.

Motordynamics, motion, movement in its varied manifestations, (bio-kinetics), in its positive or negative phases, or actuation versus inhibition, stabilization through alternations of push and pull, movement and rest.

Active movements, myogenic equilibration, muscle training, particularized modifications of, training of structures so as to assume more advantageous attitude or posture, *e.g.*, of the back, neck, abdominal muscles, thoracic muscles, diaphragm. Active elasticizing and full stretchings, training of normal movements to reach (extend) or withdraw (flex) or turn (torsion) in all directions in accord with design or function.

Passive movements (negative motor phases) exerted upon a part from without, by instrument or by an operation, by bending, straightening, forced flexions or extensions or torsions, pulling or pushing, exerting compression, also:

Resisted movements, part passive and part active, by alternations of extension-flexion and of flexion-extension, by graduated tension and relaxation, finally the whole extensive and elaborate subject of:

Massage—manipulation—manutherapy. From mere hand squeezings and relaxation, to artistic moulding, separation, pressure, thrusts single and double, *e.g.*, in a direct line or exerting modified fulcrum action as of a part supported using force at two opposite points, the leverage action of a long bone in its socket or on intra-articular pressure to release tonic spasm adhesions, rigidities, stiffness, to secure elasticity and

thereby place minor blood and lymph vessels in favorable positions for ebb and flow of fluids.

Elicitation of the reflexes, activating reflex responses, especially such as induce effects on vasomotor balance or imbalance, a very efficient means of expediting arterial contraction and relaxation, hence nutrition and elimination, general or local.

Also making use of the spinal reflexes, the sympathetic, vegetative or autonomic, the major effects obtainable or those wherein mechanical stimulation of areas influence nerve centers and sub-centers bearing on vasomotor, or vagotony or sympathectony; also indirectly on the nutrition of cell bodies at the interdiscal cord levels.*

PARTICULARIZED PERSONAL HYGIENE.

Among the more familiar or particularly applicable items are: Diet, mastication, selection, association of foods; likewise elimination, economic attitudes in defecation, skin care, dry friction to whole dermal surface tenderly, subdermal traction, etc.; clothing, etc.; judicious activities and rest, etc.

A SELDOM RECOGNIZED CAUSE OF HIGH BLOOD PRESSURE.

Edgar F. Cyriax, of London (*Practitioner*, Nov.; 1917), says that among the various conditions which have been accepted as causes of high blood pressure we search in vain for mention of one which is very common, namely, irritative states of the erector spinae. (In this communication the term erector spinae will be taken as including the dorsal extensors from sacrum to occiput.)

Of these irritative states, there are three chief groups:

*a* Hypertonus.
*b*. Diffuse fibrosis or fibrositis.
*c*. Venous congestion.

All of which may exist with various degrees of intensity, either locally or generally, alone or in combination.

The diagnosis of these conditions is not difficult when they are looked for and especially when palpated for:

a. Cervical hypertonus, if at all pronounced, is quite obvious since it produces the short thick neck which for centuries has been associated with apoplectic tendencies. Pathological increase in the normal curve forwards in the lower cervical region is often met with, and is doubtless the result of the persistent muscular contraction. Hypertonus in the dorsal and lumbar regions is not so obvious. With the patient lying on his face, there should, normally, be no difficulty in relaxing the extensor muscles of the back, but in hypertonus this is often impossible or very difficult. If the patient is able to effect this relaxation, the slightest stimulus, such as a mere touch, will immediately induce a continued powerful contraction of the muscles mentioned.

Changes in the normal curves of the back may be found, a common example is lumbar lordosis

*b*. Diffuse fibrosis or fibrositis is a frequent cause of so-called "rigid back," a condition whose importance has been greatly underestimated, for it is a potent cause, either primary or secondary, of disease. Its chief characteristics are limitation of movement, pain on attempting to move, and diffuse tenderness in the erector spinae. Also the well known nodular thickenings of the neck which are the cause of "muscular headache." These thickenings are readily defined by ordinary deep palpation.

*c*. Venous congestion, although usually only an accompaniment of (*a*) and (*b*), may exist alone, and is often associated with a slight degree of edema. The commonest site for local edema is around the seventh cervical and first dorsal vertebrae, where a circumscribed swollen area may be found, boggy to the touch and not infrequently showing radiating lines of small congested blood vessels.

The methods by which these irritative states induce elevation of the blood pressure is not difficult to trace. It is by means of a continued series of sensory stimuli to the posterior spinal nerves, in other words, by a never ending series of pressor effects. If Nature is unable to compensate for these as they arise, an increase in the blood pressure is the result.

As regards the actual exciting cause of the irritative states of the erector spinae, there is one important group, which up to the present seems to have escaped recognition, *i.e.*, anomalies of the vertebrae either as regards articulation or position. Synovitis of the vertebral joints, especially the cervical, is much commoner than generally supposed, and so, too, are apparent malpositions of the bones, which in their turn necessarily involve similar anomalies as regards their cartilages: slight multiple adhesions are frequent. The reason why these vertebral adhesions and synovitis are so common in the neck is, to

* See Sir Lauder Brunton's explanation of the effects of a mustard plaster, Text Book on Therapeutics, also laboratory findings of John P. Arnold. Also addendum to this paper, Memoranda, Mr. Edgar F. Cyriax, Practitioner, November, 1917.

a large extent, due to the fact that one is so seldom called upon to exercise the cervical muscles against resistance. The pathology of joint trouble from insufficient use holds good for the spinal column just as for articulations elsewhere.

From the practical point of view, the identification of the above-mentioned causes of high blood pressure is of considerable importance. All treatment must be directed towards removal of the cause of disease, especially that described as "mobilization of the spinal column." By this is meant active and passive movements of the vertebral joints, passive manipulations (vibrations, petrissage, etc.) of the erector spinae, a suitable selection being made in each case.

Cyriax holds that if the cause of the elevation is partly or wholly to be found in irritative states of the erector spinae, no mechano-therapeutic program is complete without appropriate trunk and neck movements.

## CANCER OF THE MOUTH.*

BY FREDERICK BRYANT, M.D., WORCESTER, MASS.

IT is the purpose of this paper to discuss the significance and importance of mouth disease with special reference to the etiology and treatment of oral malignancy. We hope to be able to tabulate facts which will prove helpful to both family physician and dentist alike and to urge their more hearty coöperation, to the end that whenever causes of disease exist in the mouth, they may be more promptly detected and removed, and that an earlier discovery and more immediate action in the case of buccal malignancy may result.

We regret to relate that only within the past few years has the medical profession given adequate consideration to the mouth as the vital drawbridge by which hostile infections gain entrance to the human citadel. When this new idea or discovery was announced and had gained medical publicity the pendulum of professional opinion swung much too far. The tonsils and the teeth, like the proverbial liver of the days of our fathers, were blamed for almost everything that happened to the race. When it was well established that these were both blameless in cases where they had been suspected, that many cases of rheumatism could not be traced to the teeth and that only a few cases of heart disease could be accounted for by the tonsils, a reaction set in and the pendulum has started to swing back. It is our purpose to attempt to conserve as far as possible that which the recent past has taught, that the reactive pendulum may not swing too far in the other direction, and we become prejudiced and shut our eyes to mouth conditions because we often find them unproductive of disease.

The records of the examinations of our draft boards reveal the startling fact of the dire dental neglect of our young national manhood. Many thousands of otherwise robust men were disqualified because their teeth had become so extensively extracted or diseased that not enough strong sound teeth were left to maintain the rigors of military life. The absence of grinding teeth was appalling. A complete and perfect set of teeth, in an American boy, was the exception. The loss of service, from dental disease, was a tremendous factor in actual war experience. This, then, becomes a large consideration in the preparedness of our people, not only for the strenuous exigencies of war but for that longer, greater, and more important warfare with that archenemy of our race, disease—which, from the cradle to the grave, seeks ever to destroy us.

The family physician and dentist must be held responsible for these things for every patient who comes under their respective care. The family physician should always take the patient's teeth into full and deliberate consideration and when there exists the least vaporing of a suspicion of their integrity or if the patient is suffering from a disease which could in any way originate in teeth difficulties, he should communicate this information to the family dentist, who should give the case an unbiased and thorough investigation. The roentgen ray enables the dentist to obtain accurate and complete information of the condition of the teeth and jaws, and no dental examination is complete without its employment. The outlay is trivial compared with the value of the knowledge obtained, whether it be positive or negative. It is far better that many roentgen examinations should prove negative than to let one serious but easily remedial case go undetected.

The family dentist should be constantly on the lookout for mouth conditions which may be act-

* Read before the Worcester Dental Society, Sept. 29, 1919.

ing as a present or future cause for general disease. Here the responsibility is pretty evenly divided and unless we coöperate in a mutually helpful way, a serious responsibility may be shifted so that between two stools the patient may fall to the ground and grave pathological conditions allowed to develop and grow till no form of medicament can avail, and the hope which might have been reasonably assured is gone forever.

It is not the purpose of the writer to enter deeply into a discussion of oral sepsis, not but what it is a subject of first importance, but because this is primarily a paper on mouth malignancy. In this connection, however, we must digress sufficiently to emphasize the fact that in our own experience and that of our associates a great variety of diseases, acute and chronic, immediate and remote, have had their origin in the mouth. I shall note but one example: A patient suffers from a disfiguring goitre. She is referred to a dentist who finds suppurative processes in the lower teeth. The dental remedy was applied and she promptly returned to her normal appearance. And so we might cite a long list, even including the eyes, of extraordinary and wonderful cures accomplished by the removal of dental causes.

In relative frequency, as a favorable haunt of malignant disease, the mouth ranks fourth, being surpassed by the female breast, uterus, and the gastro-intestinal tract. In men the mouth is six times more susceptible.

Why should cancer be so frequently found in the mouth and what elements or influences here tend especially to its causation? The exact cause of this baneful disease is not known, but authorities have pretty much accepted the theory that chronic irritation in some form, whether it be perceptible or not, plays an important rôle. A normal body cell when long under the influence of some irritating agent, whether it be chemical or traumatic, seems to undergo an inherent change in its nature and reverts to an embryonic type and a rapid proliferation or procreation of the evil cells follows. Mouth malignancy admirably substantiates this theory, for the mouth has not only been considered the dirtiest and most germ-laden part of the human anatomy, but it abounds in exceptional sources of chronic irritation.

Taken as a whole, people wofully neglect their teeth. This is especially true of men, hence their increased susceptibility to mouth cancer. Tradition has it that the faithful Boswell once related that his hero, Johnson, as a matter of unfailing routine, devoted fifteen minutes every morning to prayers and attention to the bowels, but it has not come down to us that he made any such appropriation of time for mouth requirements. This universal neglect of the teeth gives scope to irritative influences which in turn may develop into the dread malady. This etiological conception of mouth cancer reveals the startling responsibility which devolves upon the family dentist. It is clearly his duty to safeguard his patient against chronic irritative influences. The serious consequences of neglect must ever be present in his mind. Beware of mouth irritations should ever be his motto. This conception not only opens up a great responsibility but it also indicates the possibility of achievement. Viewed in this light, the dentist becomes the master-man in the great struggle to combat oral malignancy. If the writer can substantiate the dentist's responsible opportunity in mouth cancer, he will feel amply repaid for this undertaking. This, then, is the burden of this discussion. And here let us be specific and definite. Unquestionably the conscientious dentist has had the valuable prophylactic measures, about to be discussed, constantly in his mind, and has promptly seen to their correction or removal as a part of his excellent art, but it is very probable that he has never had his attention called to them as cancer preventative measures. He should see to it that no sharp or jagged tooth comes in contact with the tongue or cheek. If such a condition exists, it can readily be seen how the habit of chewing gum or tobacco would facilitate the irritation. Carious teeth should be filled or extracted. An old snag or root should not be allowed prolonged habitat in the jaw, whether suppurating or not. The writer is positive that this is a large etiological factor. Ill-fitting or broken dental plates have been charged with malignant possibilities by our radiotherapists.[8] Old people, of humble circumstances or penurious habits, have been known to harbor an old broken or irritating plate for years. Some of these seem never to have been cleansed. In many of these neglected plates some of the teeth are missing, leaving sharp metallic edges and points that irritate the tongue, gums, and cheeks, like a veritable thorn in the flesh. Crowns which are loose or ill-fitting, or which present irregular edges which infringe upon the gingivae, should receive prompt atten-

tion. "The plates for supporting false teeth, when imperfectly fitted, are proving such a prolific source of cancer that a warning should be sounded to the general public. The medical and dental professions will do well in coöperating to take prompt action whenever there are indications of chronic irritation of the gums from which teeth have been extracted. Ill-fitting sets of false teeth and bridge work have probably been responsible for many deaths from cancer."[8] Fields presents a classified series of 157 cases with a malignant process involving either the superior or inferior maxillary bone, 87 of which presented a clinical history that showed the initial lesion or ulceration or nodule to be in close proximity to an artificial denture of which the patient offered complaint. The washing away or the wearing out of the cement in post crowns offers an irritative influence. The old unsanitary bridges should be viewed with suspicion.

We are very positive in the belief that everybody should see a dentist once every six months, whether in dental difficulty or not. The dentist should keep a list of his patients and call them back periodically. He should keep his record with the same regularity that the insurance agent informs his patron of the approaching lapse of his policy. Business cares, the rush and whirl of our modern way of living, crowd out and unduly delay the needs of our bodies. We are confident that such a system of recall would not only work out a great economy, both physical and financial, for a stitch in time saves nine, but might, at times, prove a life-saving measure.

Since cancer of the mouth is six times more prevalent in men than in women, and since it is much more rarely found in those who abstain, we are compelled to take the use of tobacco into serious consideration. We believe this is incriminating evidence. Whether it is the heat from the tobacco or pipe-stem or an irritation from the smoke of a narco-chemical action, we are, as yet, unable accurately to determine. Therefore, we must place a blanket attachment on the use of tobacco in any manner. Students of cancer are agreed that tobacco is one of the causative factors, for used in any form or fashion, it tends to foul the mouth and reinforce, if not initiate, irritative agencies. Alcohol and very hot drinks are classed in the same suspicious category.

Pyorrhea is an irritating factor of first rank. All these and kindred conditions which may have pre-cancerous possibilities are decidedly detrimental to the general health of the individual, so that the ill effect is not only local, but general.

Syphilis, which almost without exception manifests itself in the mouth, when untreated, and at times when well treated, is accused, with reason, of acting as a chronic irritative influence through the production of gummatous fibrous tissue. An eminent authority states, "Syphilis is one of the most common antecedent factors in the history of cancer of the mouth."[7]

Leukoplakia should also be mentioned in this connection, for it seems a pretty well established fact that it is a pre-cancerous condition. All expressions of a diseased mucous membrane of the mouth should be viewed with suspicion. Any open sore or ulceration of the lip or mouth, especially if it possesses an elevated edge, should at once be taken into full consideration, a diagnosis made, and treatment applied.[7] Face the worst at once, remembering that the mouth is a favorite abode of malignancy, and that any lesion here, although small and slow of growth, may be nature's expression of alarm for an approaching danger. The patient is only too anxious to hear hopeful words, to have his apprehensions allayed, to dodge the fateful truth, to delay and put off the evil hour of anguish and fear. Neither physician or dentist should keep any mouth lesion "under observation." This is another expression which, while it may sound a little more wise and professional, yet is synonymous with procrastination, and procrastination here is the thief of life. "Tide and time wait for no man." We might, with good reason, add cancer to that impatient and restless list. It is blessed to discover cancer early, but it is more blessed to remove the cause. Viewed in this light, the dentist who realizes his opportunities becomes a transcendant factor in the great though one-sided battle with the deadliest scourge of our race, mouth malignancy. Students of malignancy stand as one in the value they ascribe to the early detection of cancer. What matter is it, then, if a few unnecessary treatments or consultations are held? What consequence if a suspicion goes unfounded? What harm if an incipient ulcer is suspected of malignancy? Better, far better, that this should happen a hundred times over than to sit unconcernedly by, disregarding nature's signals of distress until a local or regional disease has become a general catastrophy.

The history of the results of all forms of treatment of buccal malignancy constitutes the darkest page in the disconsolate and despairing record of cancer therapy. This pitiable record proves that oral is the most malignant form of new growth. Murphy's series of reported cases proves the limitations of skilled surgery. The report to which we refer was a tabulation of most favorable cases where there was no visible glandular involvement. The cases were taken early and at a time when the process was local or at least regional. These cases were submitted to radical skilled surgery and 52 per cent. died of the disease. Another report from the same worthy source, where there was some glandular metastasis, showed a mortality from cancer of 75 per cent.

That we get these cases late is evidenced by the fact that eminent physicians have died of the disease. But there are reasons why the mouth has become the treacherous cock-pit of malignant sieges. The richness of this locality in blood vessels, glands, and lymphatics, and its nearness to vital structures makes its treatment or removal extremely difficult. Surgeons have long most dreaded and have given the gravest prognosis in this area of malignancy. While operations in this locality have been most difficult, disfiguring and distressing from interference with the respiratory and masticating apparatus, recurrences have been most common. Surgeons now hesitate to operate on cases of malignant mouth disease, for its return seems almost inevitable.

"Cancer of the tongue is now regarded by most surgeons as inoperable, at least the promise of a cure is almost worthless. Their rapid return after complete excision is so certain as to discourage all but the very young and very bold operator."[3] What Fields says here of the tongue might as well be said of the entire group of structures which make up the upper end of the alimentary canal. We have come to regard cancer anywhere here, for that matter, as prophetic of certain doom. It is only comparatively recently that the reports of radiative treatment have been encouraging. The report of The Radium Institute of London, June, 1915, contained these words: "Epithelioma of the buccal, lingual, and pharyngeal mucous membranes usually proves refractory and disappointing in its response to radium." However, we note this more hopeful conclusion: "Under new methods of application better results may be expected." The same year we read this statement in the annual report of The Royal Infirmary: "While in advanced malignant cases a cure may not have been effected, yet in practically all treated more or less benefit was produced through the relief of pain, cessation of discharge, healing of ulcerative surfaces, the removal of local growths, and the prolongation of life." I quote the prophetic words of Delavan, written early in the year 1916: "The study of radium is in its infancy. Few investigators, at present, are ready to issue formal reports of their work, wisely refraining from announcing results until their deductions can be placed upon a stable basis of well proved fact. Any attempt to drag it before the medical public, at present, would be premature. What is needed is, not publicity, but rather the development of scientifically proved data upon which reliable reports of progress are possible. The securing of such data requires long continued and painstaking study of the action of radium, under conditions favorable for accurate observation in the hands of men especially qualified for the work. When these conditions have been fulfilled, and not till then, may we hope for the beginning of a literature at once valuable and instructive. Meanwhile, however, even the most conservative observers are willing to admit that encouraging progress is being made."[4] These conditions have been fulfilled far beyond Delavan's far-sighted vision and we now have a radium literature, voluminous, as well as valuable and instructive. A radium technic has been perfected so that the dosage is much more standardized. A wonderful transformation and evolution have taken place in the art of radiation. "With radium and the powerful transformer and the Coolidge tube, the therapist administers with precision the single massive dose that his experience tells him is necessary."[5] So definitely and accurately has the radio dosage been refined and developed that not only are burns no longer known, in experienced hands, but the amount of radiation to be delivered to the disease in question can be regulated to any degree of intensity desired.

We can now safely conclude that radium has come to stay. We have a Radium Society of America of four years' growth, officered and committeed by medical men who have had long and brilliant experience in clinical, surgical, radiation, and pathological fields of study. Radiation has furnished the medical army with a new wing which, in time, of critical and well-

nigh disastrous assault, will be found available with an armentarium of tremendous potentiality. Better and better results are being reported the world over. All the large clinics are employing it more and more and are rapidly increasing their supply. Its use is wisely restricted to a limited number of conditions and it is used much in combination with the roentgen ray and surgery.

New reports twenty-one cases of cancer of the jaw and cheek in which he used heat and radiation where there was no glandular involvement. Twelve of these suffered no return in six to eighteen months. He speaks of the results as encouraging, and concludes, "Much more is being accomplished than formerly."[2] He also reports three cases of lymphangioma of the tongue and concludes, "It would seem that radium is a specific for angioma and lymphangioma, and its great value is that it gives such remarkable results in these conditions which are not surgical."[2]

Fields concludes his admirable paper on "False Teeth as a Cause of Cancer" with these words: "Unfortunately, the majority of the cases coming to us are classified as inoperable. We find, however, that under radium therapy, about 8 per cent. of such cases are improved to the point where operative procedures may be favored. As a net result of the 87 cases here enumerated radium accords a clinical cure in about 18 per cent. By clinical cure I mean a complete retrogression of the mass and its failure to recur for periods running from 32 down to 6 months. Marked temporary improvement followed radiation in 65 per cent. of these patients. While this is not as promising as we could wish, we believe that no other form of treatment could have attained such results."

In the concluding pages we wish to discuss a combination form of treatment of mouth malignancy to which we make no claims of originality. When we take into consideration the gravity of this particular field of malignancy, its almost hopeless prognosis, the sad disappointment of all forms of medicament, surgery included, we believe that in this specially disastrous locality a radio-combination method of treatment, while it is far from satisfactory, yet promises most for the present and immediate future. Surgery is of service only when it can be employed very early and extensively and followed promptly and at regular intervals by radiation. Radiation thus becomes the handmaid of surgery. "Such a treatment we would class as ideal in every case when operation is possible."[3] All of our cases have been of this inoperable type, most of them having recurred following an extensive removal. The results have been most favorable where the lesion has been inoperable from its position rather than from its extent.[1]

The method of treatment to which we refer and which we believe gives the best results and the best promise for the future, is a combination of the cautery or electro-coagulation, radium, the roentgen ray, and surgery.[6] The operator will not always find it necessary or feasible to use all these agencies in the same case. In the different severities and localities of the lesions in the mouth, experience will dictate his choice. The most dependable of this group, in our experience, the one we always use in every case, and frequently alone, with great satisfaction, is the massively tremendous dosages of roentgen rays.

The bulk or as much as possible of the cancerous tissue should be removed locally so that the radiation may be in close contact to the base of the evil tissue. The actual cautery or electro-coagulation is preferable to surgery for this purpose, because there is no bleeding or unnecessary loss of tissue and the cancer cells are not let loose into the lymphatics or the circulation. All this outgrowth of cancerous tissue should be thoroughly but slowly destroyed. If a large sensitive area is involved, ether will be found necessary. If any teeth are in the way or are involved they should be removed. Small soldering irons make a convenient cautery. Whether cautery or electro-coagulation is used, "a slow heat that gradually cooks the tissue is preferable."[2] If the antrum is involved it receives the same treatment.

The slough resulting from this destruction of tissue clears away in from ten days to two weeks time. This leaves a red healthy base to which radium is directly applied. Radium acts from point contact only and must therefore be accurately applied directly to the area to be remedied. If the wonder metal impinges the healthy mucous membrane it inflicts a somewhat painful burn while the malignant area escapes untreated and therefore unaffected, and the patient has been done harm rather than good. To accurately accomplish this purpose we seek the aid of a dentist to fit a plate fashioned out of impression composition, which includes the area of disease. We then fix the radium tubes in this composi-

tion and change them from place to place by the use of an alcohol lamp and a small soldering iron. The radium dosage, as modified by the time and screening, will depend on the duration, extent, and obstinacy of the growth. Here individual judgment and experience must guide each operator. We believe in three close intensive treatments and then rest for three or four weeks. The radium from within and the roentgen ray from without enable us to cross fire thoroughly.

Externally we make use of the most massive roentgen ray cross-fire dosage that we can possibly produce. We spare neither tube nor machine in delivering the deepest penetration possible and after three years' experince have not one single untoward result to record. In no incidence has the skin been burned, or marked distressing symptoms followed. When a patient complains of nausea we desist for another appointment. Some few patients will require more treatments with less areas at a time. We average about three areas in the mouth cases, over the area involved and along the lines of metastasis. When the cancer involves the cheek or lower lip the metastasis into the submental and submaxillary glands is generally early. To check control and, at times, destroy these malignant and all-dangerous metastases and the sclerosing of the innocent glands and lymphatics further out is the work of the deep roentgen ray. We have come to regard this use of radiation as one of decided potentiality. The output is much more abundant than radium and is admirably suited to covering large areas.

If after this combination treatment has been fully employed, with adequate dosage and sufficient intervals, any local remnant of the cancer persists which the radiative treatment fails to destroy, and here we especially have in mind the glands in the neck, we refer the case for surgical removal and continue the radiation at stated intervals for an indefinite period, depending on the results obtained. We endeavor to impress each patient with the wise necessity of returning for examination not only for a possible recurrence locally but, far more important, to determine, as far as possible, by every method of examination at our command, if the process has escaped and is seeking other worlds to conquer.

We are positive from a review of the world-wide reports on the treatment of malignancy of the mouth that this combination possesses great advantages and gets more people well, either temporarily or permanently, than any other method. We are also firmly convinced that the clinics, where any one of these agencies is used to the exclusion of the others, suffer in the comparison of results with those where this combined radio-surgical method is employed.

These cancer victims are the most pitiable sufferers of afflicted humanity. To give them a few more years free from pain and stench would certainly be a great mercy as well as a profoundly brilliant medical accomplishment. That radiative treatment accomplishes this is admitted by all. For the most part it has been relegated to this limited and hopeless field. But, even here, burdened by a terrible handicap, a rear guard only in a most disastrous and perilous position, it has not been found wanting, but has demonstrated, in every such catastrophe, its incomparable worth. We have seen patients seemingly not far from death, weak, debilitated, and anemic, hopelessly awaiting the final call, wonderfully improved at the very start. The pain disappears. The habitual morphine can be removed. The cancerous absorption ceases. They begin to sleep better. Digestion becomes more normal. The profuse salivation, which is so pestiferous, is checked. The stench is removed and the hemorrhage ceases. Good spirits and good cheer replace depression and despair. Nature's natural stimulant—hope—though long deferred, returns. Nature now becomes more resistant. The red corpuscles rapidly increase. Metabolic processes become more active. From this extremely afflicted group we are able to rescue a small per cent. If this palliative feature of radiation was its only virtue it would still be one of the most wonderful remedies at our command.

An experience of only six months with this combination treatment is far too short to enable us to tabulate results of any value. In this brief period, treating entirely inoperable cases of mouth malignancy with the combination method, we have verified to our complete satisfaction all the reports and claims of these pages as to immediate relief and apparent cure. The relief obtained, whether it be permanent or not (and we have every good reason to believe it will be in a small percentage), has amply justified this combination method and gives it great promise for the future.

Let physicians and dentists combine their knowledge and experiences in discussing, in

joint sessions, the early removal of chronic irritative influences and the early detection of precancerous symptoms in the mouth. Let them lose no opportunity to inform their patients and the public, as far as possible, that a general proper view of malignancy may prevail; that to recognize pre-cancerous symptoms early or remove their cause is the heart of the cancer problem; that life is at stake; that delay and procrastination here mean death; that only prompt action can give hope of life.

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## NEURO-PSYCHIATRIC WORK IN THE ARMY.*

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THE use of mental experts in an army is a very modern innovation. The first instance in the history of the world where mental cases were separately cared for by specialists from the front lines to the permanent home hospitals was in the Russo-Japanese War of 1904. Not, however, until the present World War did the astounding increase of mental and nervous affections bring in to overworked prominence a department hitherto relatively insignificant.

This increase of mental and nervous affections was so great in the English and French forces in the first months of fighting as to overfill all the hospital space both in the field and at home. From lack of facilities and mostly from lack of knowledge of how best to deal with these cases, the partly recovered were discharged disabled to the care of their relatives; and soon all England was full of pitiable war-cripples, potentially curable, but never getting better. At the time of the United States' entrance into the war it was reported that one-sixth of all disability discharges from the British Army had been for mental and functional nervous disease; or, if discharges for wounds were excluded, these nervous cases constituted one-third of all discharges for disability.

These few facts may give you gentlemen who have affiliation with hospitals in your home towns some idea of the difficult problem before the Surgeon-General's office in providing adequate hospital space for these cases and facilities for forwarding them from the front to special hospitals for their care and treatment. For it must not be forgotten that, from the nature of their symptoms, special attendants, constant supervision, and specially constructed wards were often necessary. About this time, too, our Allies had begun to realize that they had made a mistake in discharging many of these cases only partly cured; and, to profit by their experience, we had to provide adequate hospitals for prolonged treatment of possibly great numbers.

An effort which greatly diminished the incidence of nervous disability in our troops was instituted early in our Army and has been effective since the first few months of our participation in the war. This effort was based on the sound medical maxim, "remove the cause," and the realization that a great many of the potentially neurotic and unfit could be recognized and refused by local examining boards and by a careful psychiatric survey of recruits at all mobilization camps. Statistics are not available at present, but from my experience of over a year with those returning from abroad at a special mental hospital in this country, I think I am correct in saying that these precautions practically eliminated from the later troops those cases previously treated in insane hospitals, or otherwise mentally unfit for war service, who were all too numerous among the first volunteers who passed a far less efficient testing. The best way to treat war neuroses and psychoses is to *prevent* them. That this has been successfully done is a fact which will reflect lasting credit on the organization and efficiency of the neuro-psychiatric division of our medical corps.

In this brief survey of the neuro-psychiatric work of the Army we will consider—

1. Special examination of recruits in the mobilization camps.

2. The incidence, care, and transport of the mentally ill from the front lines in France to

* Read at the Annual Meeting of the New Hampshire Medical Society, May, 1919.

the special treatment hospitals in this country.

3. The medical problems in the special hospitals for neuro-psychiatric cases.

1. Cantonment work. In conjunction with the regular examining surgeons, all recruits had to pass the neuro-psychiatric board. These examiners were greatly aided by the results of a previous group testing and grading by the camp psychologists. Generally, the psychiatric examination consisted of rapid observation for tremors, changed reflexes, thyroid enlargements, etc., and an estimate of mental history and capacity by a few questions. Where mental deficiency was suspected a standard intelligence test was given later; while all doubtful cases of any sort could be referred to the hospital for further observation. By this method each examiner could handle from one hundred to two hundred men a day.

As to the results of this examination in the various cantonments I will quote from a report by Colonel Bailey, of the Surgeon-General's office:—"Disqualifications based solely on the existence of nervous and mental disease or defect have been found in from one-half to five per cent., varying with the command examined. It is believed that most of them would not have been recognized by general medical officers. . . . . Nearly three-fourths of the recommendations for discharge were for conditions primarily mental as opposed to organic disease or defect of the nervous system.

"Among the first 13,481 recommendations there were

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| Mental defect | 4,737 | cases, or | 35.1% |
| Epilepsy | 1,729 | " " | 12.8% |
| Psychoneurosis | 1,542 | " " | 11.4% |
| Constitutional psychopathic state | 1,239 | " " | 9.2% |
| Dementia praecox | 800 | " " | 5.9% |
| Alcoholism | 759 | " " | 5.6% |
| Manic depressive | 257 | " " | 1.9% |
| General paresis | 237 | " " | 1.8% |

"It will be observed that of this large group of recommendations for discharge, 83.7% represented a class of case which is apt at some time or other to require custodial care; and that the elimination at the source of soldiers afflicted with any of the foregoing conditions is an essential part of the programme for the care of the military insane, to say nothing of its help in the forming of a strong army."

Besides doing these examinations the camp psychiatrist cared for acute cases needing treatment in the psychiatric wards of the camp hospital until they were discharged or until transferred to the special hospital of the district designated to receive the overflow.

Let those who esteem the employment of medical specialists an undue refinement of care in such a crisis consider this work and its results. What great expense and trouble were saved by eliminating these thousands of potential trouble makers from weakening the backbone of our Army and hindering its victorious march onward! The war was truly waged in France, but won in America. And none in France more truly did his bit than the modest camp psychiatrist doing his daily grind for months without let-up—steadily preventing trouble. I, fortunately, was not assigned to much such work; but I appreciate its arduousness and cannot overestimate its importance.

2. The nervously unstable broke down under the strain of active service both in the camps of this country and when en route to Europe. But the chief source of the neuro-psychiatric patients was the combat divisions in France, either during the strenuous training behind the lines or while actually engaged in trench warfare, exposed to all kinds of shell fire and reduced by overexertion to mental and physical exhaustion. The plans for caring for them had to be as complete and continuous and adapted to their needs as the plans for forwarding surgical injuries.

Suppose a group of shell-shock patients were brought into one of the advanced field hospitals behind the lines in France. Such cases, as soon as possible, would be sent by motor transport from this and other similar field hospitals to the common Evacuation Hospital some miles to the rear. Here they received more careful examination and attention than was possible further front, and might first meet specially trained psychiatrists.

These psychiatrists separated the incipient neuroses and treated them under combat conditions in wards attached to the evacuation hospitals, and were successful in returning to duty as high as 80% of these cases which formerly remained sick for months by fixation of their neuroses by hospitalization.

The evacuation hospitals were situated at railhead. Thence these cases were transferred under special attendance as psychiatric cases by train to the psychiatric ward of a base hospital far in the rear. Here a great number recovered enough to return to camp duty and some to rejoin their comrades at the front. The rest were passed on to other similar hospitals until finally

they reached the port of embarkation. On the ocean transports special provision was made to accommodate the suicidal or violent, and thence they were disembarked at the debarkation hospital at Ellis Island, New York, Newport News, Va., or other ports on our Atlantic seaboard. Here they usually rested for a few days to recuperate from the voyage, and were re-classified according to the nature and severity of their symptoms and assigned for transfer to the several special hospitals that were best fitted by equipment and personnel to deal with particular classes. Thus, those suffering with the psycho-neuroses without violent mental symptoms were sent to Plattsburg Barracks, New York, which, since last July, has received chiefly the neuroses and epileptics. Practically all those with severe mental symptoms have been sent to the General Hospital No. 4, at Fort Porter, New York. This was the first Army Hospital designated to receive overseas mental cases and was opened in the fall of 1917. Later, when its wards became over-crowded, other hospitals not far distant were opened to accept the milder forms of mental disease and convalescents, and were filled from Fort Porter by transfer. Thus the treatment and control under capable experts were continuous from the combat area in France to the final convalescent hospital at home. Here a large proportion of them got well and were discharged recovered, though some with chronic ailments existing before enlistment were transferred to state hospitals in their native states. The disposition of similar sickness in officers was different. Most of these were cared for in special wards at Bloomingdale Hospital near New York, and at Walter Reed Hospital near Washington, D. C.

This bare outline just glimpses the resting points in their itinerary, and I must leave it to your individual medical judgments to fill in all the details and difficulties in management, feeding, and care of these cases,—all of them mentally sick, many totally irresponsible, and not a few violent and vicious acting. From personal observation of sometimes over a hundred a day of these arrivals at their final destination, I have been impressed by their well-fed and generally comfortable physical state, in spite of the dust and stains of travel. No adequate idea can be gained of the work of this department of the medical corps without due consideration of the problems connected with the wholesale transport of mentally sick soldiers.

3. The advantage of permanent brick and stone construction for the prolonged treatment of neuro-psychiatric patients was so obvious that, as far as possible, permanent barracks buildings at several army posts were remodeled as psychiatric wards, while a few civil hospital buildings were leased for the purpose. The special hospitals at Fort Porter, near Buffalo, and at Plattsburg Barracks may be mentioned as good examples of this adaptation of old structures to new uses, while the well-known Jackson Health Resort served admirably as an army convalescent hospital.

In each, wards were light, well ventilated, and easily warmed in winter. An adequate hydrotherapeutic plant was installed for all kinds of water treatments, with special showers and continuous baths. All the departments of a general hospital were available to these cases. Thus there were the x-ray; eye, ear, nose, and throat; general and special surgical, and general medical departments in charge of particularly qualified men, while the laboratory facilities were such as are customary only in the largest cities. While these departments were constantly available for consultation and coöperation, the individual control and responsibility for treatment of the neuro-psychiatric patients lay with the trained psychiatrists in charge of these wards, most of whom had held state hospital positions in civil life.

Members of the Army Nurse Corps controlled the work of the wards and a nurse was on duty night and day on all wards. Among those patients partly responsible the presence and personality of female nurses is of distinct benefit to the morale and general neatness both of the patients and attendants, while their expert care and tenderness to the old or bed-ridden are of inestimable value. In our wards devoted to violent and vicious talking and acting irresponsibles, their efforts were bravely and loyally performed, but the real control and management of these wards necessarily devolved more upon the trained male attendants. Just as the members of the Nurse Corps at these hospitals were largely recruited from those having state hospital training, so the medical department men who served on the wards as attendants were selected for their previous experience in state hospital work or their ready adaptability and liking for the service. Some of these men at the hospital where I was stationed were graduate male nurses who had five to twelve years pre-

vious experience in all sorts of insane hospital work. Yet most of them were privates, except some few who could be made non-commissioned officers. A male nurse has no standing as such in the Army. Yet a very large part of the responsibility and expert control of insane-acting patients devolved upon and was efficiently performed by the attendants at Fort Porter. I will always look back upon them as the most loyal and efficient and expertly humane group of male attendants that I have met in twenty years' hospital experience. If the Army were to make permanent its present care of its insane in its own hospitals, some recognition of a trained attendant's status more distinctive and honorable than at present would seem advisable for the good of the service. These remarks imply no adverse criticism of the general efficiency of the Army Nurse Corps, but a well-trained, capable attendant is just as valuable as a nurse. His work may be supplementary to hers, but both alike are responsible for the comfort, control, and therapeutic efficiency of ward life, and both alike demand the best attributes of educated mind and heart.

Another group of helpers whose work counted large in the summary of general efficiency were called reconstruction aides. They were graduates of special schools where occupational therapy was taught. Their work in basketry, rug weaving, knitting, toy making and other diversional endeavors, both in the wards and workrooms, stimulated interest and hope, directed impatient energies, and were of marked therapeutic value.

The chaplain, also, busied himself constantly in visiting the patients and arranging both for religious exercises and musical and other entertainments in the wards and assembly rooms.

With this material equipment and personnel a special psychiatric hospital in the Army received its patients from overseas and immediately started on its diagnostic decisions and therapeutic arrangements. Besides the usual physical examination and routine laboratory analysis of urine and blood Wassermann, a detailed mental examination was written out. If indicated, a special intelligence test was made to determine the degree of mental deficiency; and if the blood Wassermann proved positive, a spinal puncture and examination of the spinal fluid were ordered. All syphilitics were actively treated, usually by venous injection of salvarsan, or its equivalent. All other physical ills besides the psychoses for which these soldiers entered hospital were carefully attended to—teeth were looked after by the dentist, the eyes fitted to glasses, and other necessary work done by the appropriate specialist or general surgeon, and the case fully written up and presented to the staff conference, which decided the diagnosis, suggested treatments, and later reviewed the case before discharge. Many newly recovered psychiatric cases considered unable to undertake a long journey home alone were sent with an attendant and discharged on arrival; while the obviously chronic or incurable cases were transferred to St. Elizabeth's Hospital in Washington, or the State Hospital nearest their home.

Now, just a word as to the kind of patients included in the term neuro-psychiatric:

In the early months of the war, the effect of high explosives was so obviously a new cause of some mental incapacity that all the psychiatric cases were soon popularly referred to as "shell shock" patients, whereas we recognize among them the same clinical forms of mental disease as have been treated for years in civil hospitals. There is no new war psychosis.

That the effects of near-by explosion may shock a person into unconsciousness and even cause death without obvious physical injury has been repeatedly observed; and that those so injured who live may show changed reflexes, mental confusion, amnesia, and other effects similar to those of a contusion on the head from a "black jack" or a fall is likewise undisputed. These are the true "shell shock" patients, and have been numerous enough in this war to justify a separate classification. The great majority of "shell shock" neuroses cases, however, were never so shocked; many with typical symptoms never got near the fighting front; while some who did were injured by the fear of death more than by any real accident. As in a stage of seasickness there comes a time when one is afraid he will *not* die, so to some of these soldiers, over-worn with onerous duty that simply had to be performed, any respite, even death itself, might seem preferable to "carrying on" further. In such a crisis, shell shock symptoms which incapacitated for service might be copied from others remembered or be suggested by the circumstances. That all these are generally mentally incapacitated and should be treated as major hysteria is admitted by all. The dogmatic Freudian theorists triumphantly announce the supremacy of the over-active unconscious mind,

while others, who admit their ignorance, partly content themselves with reference to a constitutionally unstable mental equilibrium, and group these as having subtle character defect. They remind one with court experience of the traumatic neuroses of tort cases against corporations. In some few of these cases intention to evade seems so near the forefront of consciousness as to suggest malingering—though grave malingerers themselves are generally psychopathic. Some have gone so far as to class these latter border-line cases as the only true lunatics,—because the true psychoses are known *not* to be influenced by the moon, and this class, they claim, reflect some of its golden color. In this connection they cite the newspaper report from General March that of 5,000 neuroses cases in France awaiting to be sent home, 2,000 recovered within twenty-four hours of the signing of the armistice. All of you doctors have numerous hysterical persons among your most capable families and may judge from your own troubles with them the problem of "false shell shock" in the Army. But a full discussion of the clinical forms of mental affection in soldiers is too great a subject to open up at this time. They are mentioned merely to complete our reference to the medical problems of the neuro-psychiatric division.

I realize that it is an impossible task in twenty minutes adequately to describe the multifarious duties and activities of this department of our medical corps, and I have purposely left out all reference to the constant training in army procedure and other purely military aspects of the work. My object has been to present a bird's-eye view of the magnitude and importance of these duties and the multitudinous problems that relate to this specialty; and, incidentally, to show how carefully and well worked out all efforts were put forth to insure these unfortunate soldiers as efficient care and medical attention as could be obtained by civilian patients in our best civil hospitals.

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NEW JERSEY SURVEY OF MIDWIFERY.—A survey is being conducted in New Jersey to determine the conditions of midwifery in the different counties and conferences are being held in various sections for the benefit of midwives and for the discussion of supervision of babies and homes.

## OBSERVATIONS ON THE TREATMENT OF VESICAL CALCULI. AN ANALYSIS OF 455 CASES FROM THE MASSACHUSETTS GENERAL HOSPITAL.*

BY J. DELLINGER BARNEY, M.D., F.A.C.S., BOSTON.

THE Massachusetts General Hospital saw the final development of the lithotrite and the evacuator in the hands of the late Dr. Henry J. Bigelow in the 70's. Successive generations of house pupils and staff surgeons have been taught the art handed down from the master, so that those of us of a younger generation turn naturally to lithotrity and litholapaxy as the operation of choice in the great majority of cases of vesical calculi. Yet as one travels around from hospital to hospital, whether it be in Boston or elsewhere, it is obvious that, with few exceptions, the suprapubic operation is the one most generally resorted to. Being somewhat confused by this apparent divergence of views as to the most satisfactory methods of approaching these cases, it was decided to let the records tell their own story.

I have accordingly collected 455 cases of vesical calculi from the hospital records, going back from the present time to about 1870, when lithotrity and litholapaxy were receiving their finishing touches at the hands of Dr. Bigelow. There were 392 cases of lithotrity and 63 cases of suprapubic cystotomy. No selection of cases has been undertaken except to exclude those in which, owing to other operations or conditions, the desired data might be vitiated.

Certain generalizations are of interest. Of the entire series of 455 cases, 442 were in the male. Thirty-two per cent. of these occurred between the ages of 60 and 70, 67% between the ages of 50 and 80. The youngest patient underwent a lithotrity at the age of three years and recovered: the oldest submitted to the same operation at the age of 88 and died. The mortality of the whole group was 9.5%. Ninety-four cases (20.5%) were recurrent, 40 or 42.5% after lithotrity, 10 or 10.6% after suprapubic cystotomy, both of these operations having been done more than once in several instances. The records do not state the nature of the previous operation in the remainder.

To simplify matters the data peculiar to the suprapubic cystotomies will first be set forth. There were 63 in this group, and in 12 the

* Read at the thirty-first annual meeting of the American Association of Genito-Urinary Surgeons, Atlantic City, June 16, 1919.

surgeon essayed a lithotrity, but owing to the size or hardness of the stone, or some other difficulty not mentioned in the records, a suprapubic operation was finally resorted to. The anesthetic was ether in 48, gas and ether in 16, gas and oxygen in 3, spinal in 4, and local novocain in 1. The bladder was drained by a suprapubic tube alone in 14, by an inlying catheter in 40, by both routes in 16, while in two cases no drainage whatever was used. There were numerous complications during or after operation. Four cases developed epididymitis, serious wound infection took place in 11, "uremia" intervened in 6, the peritoneum was accidentally opened at the time of operation in 2, subsequent peritonitis developed in 1, another had a periurethral abscess, 2 suffered from excessive extravasation of urine, and 2 others contracted pneumonia.

The group of 393 cases of lithotrity has also its points of interest. Ether alone was administered in 332, gas and ether in 22, gas and oxygen in 5, spinal anesthesia in 20, while in 10 the urethra alone was anesthetized with alypin or cocaine. Bladder drainage was carried out in only 119 cases, the remaining 272 patients being denied this undoubtedly considerable advantage. The complications peculiar to this group include epididymitis in 13 cases, "chills and fever" in 11, persistent hematuria in 9, periurethral abscess in 4, anuria in 3, and temporary postoperative incontinence in 2 (both in women). From two to five sittings at intervals of as many days and sometimes lasting from one to two hours were found necessary for the complete removal of the stone in 18 cases; in 7 there were multiple stones, and in 5 foreign bodies were found to be the nucleus of the stone. In three cases the jaws of the lithotrite could not be closed tight owing to the accumulation of crushed stone and the instrument had to be removed by perineal urethrotomy. Diverticulum of the bladder (one in a female) was noted in 3, and in each the difficulties of the operation were enormously increased by its presence. In one case it was noted that the stone was strongly adherent to the bladder wall. The largest stone mentioned in the records had a diameter (as measured by the lithotrite) of 2¼ by 1⅝ inches, while the heaviest stone weighed 1380 grains.

In comparing certain items of the two groups some interesting facts are brought out. Postoperative residence in the hospital averaged 35 days for the cystotomy cases, 11 plus days for the lithotrity cases. The longest stay of a lithotrity case was 74 days; the shortest 1 day (there were several of these); the longest residence of a cystotomy was 105 days, the shortest 11 days.

Comparison of the mortality of the two groups shows 26% for the suprapubics and only 7.25 for the lithotrities. As regards the causes of death, "uremia" (so recorded) leads in each, 7 in the former and 9 in the latter. Sepsis caused four deaths in the suprapubic group and pneumonia, shock, peritonitis, and extravasation of urine each one case. In the lithotrity group further causes of death are stated to be pneumonia in 6, cardiac failure in 4, peritonitis in 3, rupture of the urethra in 2, and gangrene of the bladder in 1.

By division of the whole series of cases into decades from 1870 to date and comparing common factors, some interesting features are brought out. No suprapubic operations were performed between 1870 and 1890, so that the cases studied in those years comprise only lithotrities. In the first decade the mortality was 10.3% and the average postoperative stay in the hospital was 19 days. The bladder was drained in but 1 case.

In the next decade (1880-1890) the mortality was 9.8%, and the average stay in the hospital 15 days. Bladder drainage was resorted to more frequently, but only in about 11% of the cases.

Beginning with 1890 we have suprapubic operations to reckon with and to compare with lithotrities. From 1890 to 1900 there were 124 of the latter and 17 of the former. The mortality of the suprapubics was 53% while that for the crushing operation was but 4.9%. The contrast in hospital residence is equally striking, for that of the cystotomies was 43 days, while for the lithotrities it was but 9 days. In the latter group bladder drainage was employed in about 35% of the cases.

From 1900 to 1910 the total number of cases of vesical calculi (appropriate for this analysis) fell off considerably, there being but 92, of which 58 were lithotrities and 34 were cystotomies. Whereas in former decades ether alone was used as an anesthetic, in this period the combination of nitrous oxide with ether was frequently employed and gas-oxygen occasionally. Local anesthesia of the urethra was done 8 times. Suprapubic mortality fell in

this decade to 10%, whereas that of lithotrities, while still making a better showing, rose from 4.9% to 7.01%. Days in the hospital remained practically the same (9 days) after the crushing operation, whereas after cystotomy it dropped to an average of 34 days.

Sixty-seven cases were collected from the records from 1910 to date. Lithotrity was done 45 times and cystotomy 22 times. In addition to the anesthetics already mentioned as being used in the previous ten years, spinal anesthesia now came into use (24 cases). Mortality of lithotrity for the past 9 years has been 2.2% as compared with 13.6% for the suprapubic cystotomies. The latter have remained in the hospital an average of 29 days, the former an average of 7 days.

Given a case of vesical calculus, which is the best operation as regards mortality, stay in hospital, and possibilities of recurrence? The foregoing statements of fact show convincingly that while the prospects of recurrence of the stone (or, let us say, incomplete removal of the fragments) is considerably more with lithotrity than with cystotomy, the other two factors (mortality and hospital residence) are so much more in favor of lithotrity that it would appear to be no argument.

Let it not be forgotten, however, that the lithotrite and the evacuator are very special instruments and that they require special skill for their proper use. In the hands of the rough or untrained general surgeon either implement, especially the lithotrite, may do great damage. Such an individual should certainly do a cystotomy rather than a crushing operation. Furthermore, there are certain definite contraindications to the use of the lithotrite even in skilled hands. Diverticulum of the bladder may make the performance of lithotrity exceedingly difficult, or even impossible: obstructing prostate should be treated as such, the stone being regarded as a secondary affair: very large stones which exceed the limits of the jaws of the lithotrite or which prevent sufficient distention of the bladder with fluid; these are among the chief contraindications to the crushing operation. Each case must be decided upon its own merits and the surgeon must decide whether a well done suprapubic cystotomy is likely to produce more harm than a poorly done lithotrity and litholapaxy.

In conclusion I wish to lay special stress on the following points which a study of 455 cases of vesical calculi has brought out.

1. The combined mortality of lithotrity and suprapubic cystotomy is 9.5%. Of lithotrity alone the mortality is 7.23%; of suprapubic cystotomy it is 25%.

2. Recurrence is to be expected in at least 20%, especially where the previous operation was lithotrity.

3. After lithotrity patients may expect to stay in the hospital an average of about 11 days, although a great many cases are able to leave earlier than this (often in 2 or 3 days). After suprapubic cystotomy the average stay is about 35 days, although in favorable cases this time may be considerably shortened.

4. Bladder drainage is of undoubted value in the after care of cases of lithotrity and litholapaxy; in cases of cystotomy it is an essential.

5. The choice of the proper anesthetic undoubtedly plays an important part in the outcome of these cases.

6. Barring certain obvious contraindications to its performance, lithotrity undoubtedly is the operation of choice. Among these contraindications is the general surgeon's lack of training in the use of the lithotrite and evacuator.

7. The steady fall in the number of cases of lithotrity and suprapubic cystotomy shown in the hospital records from about 1900 to the present time is due neither to a growing scarcity in the number of stones nor to an increasing unpopularity of the hospital. As a matter of fact more stones have been removed from the bladder during these years than ever before; but owing to modern methods of diagnosis the stone has been relegated more and more to second place, while the underlying cause (obstructing prostate, alkaline urine, diverticulum, etc.) have commanded the surgeon's attention.

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APPEAL OF THE ITALIAN WAR RELIEF FUND.—The Italian War Relief Fund of America has issued an appeal for materials to be forwarded to Italy for the making of clothing for Italian men and women. The committee has stated that tubercular children are dying in great numbers, thus placing the next generation of men and women in great danger.

## Clinical Department.

### OPERATION FOR ACUTE MASTOIDITIS AT AGE OF 84, WITH RECOVERY.

By Edmund J. Butler, M.D., Cambridge, Mass.,

*Visiting Aurist and Laryngologist to the Cambridge Hospital.*

George W., aged 84, was admitted to the wards of the Cambridge Hospital on May 5, 1919, with an acute bronchitis. Past history negative, except for two attacks of erysipelas. He had no previous history of ear trouble; hearing always acute; appetite always good, and constitution sound, with only a slight palpable sclerosis of arterio radialis.

During the first ten days in the hospital the patient had a slight variation of temperature ranging between 98 and 99 degrees. He coughed frequently and raised vast amounts of thick, yellow sputum, cultures and smears of which showed staphylococcus and streptococcus. No tubercle bacilli were found.

May 17, twelve days after admission, the patient complained of pain in left ear. His temperature rose from normal to 102 degrees, but he had no chill. Lungs were negative, except for a few scattered moist râles transmitted from the bronchi. Consultation with Dr. Shannon, six hours after patient first complained of pain, showed a left auricle tender to touch, and very slight tenderness to pressure over antrum. There was no tenderness over tip of edema of skin over mastoid. The floor of the canal was covered with tenacious, foul-smelling pus. The drum was ruptured spontaneously in the posterior inferior quadrant, giving the middle ear cavity sufficient drainage. The tympanic membrane was bright red and the handle of the malleus was just perceptible. Frequent hot boric irrigations, heat to the mastoid and argyrol 20% to the pharangeal orifice of the left Eustachian tube failed to bring relief after forty-eight hours. The temperature remained elevated; the mastoid from the antrum to the tip became very tender to touch, with marked edema of the sub-cutaneous tissues over this area. The posterior superior canal was bulging with the middle ear cavity draining freely through the opening in the drum. The pain was constant and the patient begged "to have something done for relief of the pain."

After consultation with Drs. N. V. Shannon, Albert August and C. M. Hutchinson, it was decided to open the mastoid. Because of the age of the patient and his bronchial condition, which had shown marked improvement since admission to the hospital, the operation was done under local anesthesia.

Morphine sulphate gr. ¼ sub-cutaneous was administered and the usual mastoid preparation made. Anesthesia was administered by Dr. Hutchinson, 2% solution of cocaine being injected into the canal and ½% solution into the sub-cutaneous tissues over the mastoid. The usual incision was made, the cortex opened in the suprameatal triangle with a chisel, and the antrum cleaned. The remaining cortex that had to be removed was broken away with a Yensen bone forceps. The mastoid cells, which showed but very slight sclerosis, were filled with a thick, foul-smelling pus, a culture of which showed staphylococcus and streptococcus.

After cleaning out the antrum and cells a wick was inserted for drainage. The patient left the operating room free from pain, with a pulse of 78 and of good quality. He stated he had no pain during the operation except when the bone was chiselled into.

Two days after the operation the dressing was changed and considerable pus drained from the open wound. The temperature dropped to normal after the first dressing and remained so for five days, when a low grade erysipelas developed over the left side of the scalp. This condition lasted ten days; the mastoid filled in with granulation tissue, and the patient had an uneventful convalescence. He was discharged from the hospital June 22, with the incision healed, hearing normal, and in good physical condition.

### CASE REPORT OF HYPERPITUITARISM AND HYPERGLYCEMIA.

By F. Van Nüys, M.D., Weston, Mass.

Mrs. E. M., aged 63, entered the Waltham Hospital on June 27, 1919. Family history negative. Past History: Two children living. No miscarriages. Menopause at 45. Robust and well nearly all her life. Six years ago laparotomy for "abdominal tumor." Influenza last winter. For some years has been subject to vague body pains with occasional swelling of hands and feet.

About four years ago symptoms of diabetes

began—polydipsia, polyphagia, polyuria, pruritus, and loss of weight. She now weighs 140 where she used to weigh 240 pounds. A diabetic diet gave her much relief.

At rare intervals she has attacks of dizziness with headache and painful retention of urine for twenty-four hours at a time. Seven months ago and three weeks ago she vomited without known cause. Not projectile. For some time before the present illness she has been in good condition, active and lively, and on unrestricted diet.

Present illness: On June 26, out of a clear sky, she was taken with nausea, vomiting, dizziness, diarrhea; and, gradually, with coma. Physical examination: A short, well colored, well developed French Canadian, with heavy cheek bones, broad nose and undershot jaw, in coma. Acetone odor on breath. Sugar dermatitis about vulva. Skin dry and rough. Extremities not enlarged. Heart and lungs not remarkable. Abdomen protuberant with bladder swollen to navel—relieved by catheter. Neither liver nor spleen palpable. Pelvic examination negative. Reflexes normal. Urine: 1036, no albumen, sugar 5½%, acetone and diacetic acid four plus. Some pus but no blood or casts in sediment. The 24-hour amount was impossible to obtain because of involuntary urination. Apparently the amount was not much increased over normal.

The usual Allen treatment for diabetes was instituted. Five days later she became sugar-free on 90 gm. carbohydrate, not requiring complete starvation. The diacetic acid, however, persisted for three days longer. With decreasing acidosis her mind cleared, although sphincter control was not regained for some time. Occasionally she vomited. Great difficulty was found in getting her to take food. For the first ten days the most she took on any one day amounted to less than 500 calories. Thereafter her appetite increased satisfactorily. When the 24-hour carbohydrate intake reached 250 gm. her urine showed .5% sugar. This quickly disappeared under limited carbohydrates. At no time did her acidosis return. Occasionally her stools showed blood (piles?), but otherwise were not abnormal.

Blood pressure taken daily kept between 124 and 140 mm. systolic. White count was 14,000. Temperature, pulse, and respiration kept normal.

Blood sugar, taken fasting after urine was sugar-free for 18 days, was 290 mgm. per 100 c.c. of blood (Dr. F. L. Burnett), indicating a high renal dam for sugar.

Hyperpituitarism was suspected from her facies and glycosuria. Repeated roentgenograms of the skull seemed to show a much enlarged sella turcica. The shadows were obscure as if a growth partly obliterated the outlines of the region.

Throat and eye examinations by Drs. C. T. Porter and R. C. MacKenzie showed normal pharynx, eye-grounds, and fields of vision.

Spinal puncture gave 40 cc. clear fluid under some pressure. Wassermann negative. Globulin not increased. Cell-count 5 per cubic millimeter. The blood Wassermann also was negative.

Pituitrin was given without appreciable effect. Potassium iodide seemed to be of decided benefit. Finally she was able to sit up and walk a little. On July 27 she was taken home.

## Book Review.

*Nervousness, Its Causes, Treatment, and Prevention.* By L. E. EMERSON, PH.D. Boston: Little, Brown and Company. 1918.

Nervousness is a condition which may be eliminated often by some slight adjustment in one's mental attitude. This is particularly true of nervousness resulting from functional, rather than organic, disorder. The author of this volume has shown a remarkable insight into the causes of nervousness and offers practical suggestions for treating and preventing this condition. He emphasizes the importance of studying personality, of analyzing personal and social consciousness. Inability to cope with situations and to adjust one's self so that one's reaction to the social environment is harmonious can be overcome by intelligent training. This guidance should be tendered to children as soon as their instincts and desires begin to develop. Repression of some normal instinct in childhood frequently causes the exaggeration of some fear and develops into an abnormal state of mind which will result in a nervous breakdown later in life. This book points out how an understanding of mental processes may help a patient to overcome conditions which are simple and remediable if they are understood and squarely faced, and of complex and serious nature if fostered by a secretive and neurotic temperament. This is a book of constructive character and may be strongly commended to persons suffering from nervous disorders.

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## RECURRENCE OF INFLUENZA EPIDEMIC.

The possibility of a recurrence of influenza this winter has been discussed by Surgeon-General Blue in an official bulletin, in which he states that although the epidemic will probably recur this year it is not likely to be so severe as during last winter. He urges state and city officials and boards of health to be prepared.

It is known that influenza is spread by direct and indirect contact; but because it is not yet certain that the germ has been isolated, there is no preventative on which we can rely with assurance except the enforcement of rigid rules of sanitation and the avoidance of personal contact. It is probable that there was a close relation between the influenza pandemic and the constantly increasing pneumonia mortality rate prior to the fall of 1918, and it is to be hoped that a lesson has been learned from this failure to recognize the early cases. The mortality statistics of the United States show that there were a number of extensive though mild forerunners during the three or four years preceding the epidemic last winter. The studies of the Public Health Service indicate that the disease was not an importation from abroad.

Although there is as yet no conclusive evidence on this point, we have reason to believe that an attack during the earlier stages of the epidemic conferred a considerable but not absolute immunity in the later outbreaks. One thing, however, is certain,—that whatever the microorganism may be, it is communicable from person to person, and it is probable that the germ is carried about not only by persons ill with influenza, but also by some who are entirely well. The report of the Surgeon-General states that it is probable that we may expect at least local recurrences, with an increase over the normal mortality from pneumonia for perhaps several years, and urges that we be prepared to meet them by previous organization of forces and measures for attempted prevention, treatment, and scientific investigation.

## SIR WILLIAM OSLER.

In a recent issue of *Science* there is an account of the presentation made to Sir William Osler, Regius professor of medicine in the University of Oxford, on July 11, 1919, his seventieth birthday. Two anniversary volumes containing medical contributions by English and American colleagues were presented by Sir Clifford Allbutt ot the house of the Royal Society of Medicine on behalf of about one hundred and fifty subscribers and contributors.

Sir William Osler, honored equally by Great Britain and America as an eminent leader in medicine, beloved by his professional colleagues, his students, and the sick with whom he has come in contact, has devoted his life and service to the advance of medical science. During his life, he has held the chairs of medicine at McGill University, the University of Pennnsylvaia, the Johns Hopkins University, and Oxford. His knowledge of pathology was acquired in his early days at Montreal; this training and the fact that for many years he has taught medicine to students not from text-books, but by direct contact with the sick, have made possible his eminent position in clinical medicine.

Although not a laboratory physician, but a man who was devoted to his patients and his pupils, Sir William Osler has made a number of discoveries of profound significance to medical progress. He described the blood platelets in 1874 which he was the first to define as the third corpuscle of the blood in relation to the formation of thrombi. Among his other contributions to medical science may be mentioned his discovery of the parasite of verminous aneurysm and the relation between mycotic aneurysm and mycotic endocarditis, and his description of the ball-valve thrombus at the mitral orifice, the visceral complications of erythema multiforme, chronic cyanosis with polycythemia and the erythematous spots in malignant endocarditis. These represent in part the achievement of Sir William Osler, deservedly the recipient of the honor and esteem of the entire medical profession.

## THE BOSTON CITY HOSPITAL.

THE fifty-fifth annual report of the Boston City Hospital includes a record of the work accomplished during the year 1918 by the main hospital, the South Department for infectious diseases, the Haymarket Square Relief Station, and the Convalescent Home in Dorchester. The entire expenditure for all departments of the hospital for maintenance during the year amounted to $974,374.69.

The Boston City Hospital's contribution to the war was considerable, both at home and abroad. Many members of the Hospital staff, nurses, and employees have been in military service. Base Hospital No. 7, organized at the Boston City Hospital with Dr. John J. Dowling, superintendent, as its director, was mobilized at Camp Devens in February, and in July left this country for France, where it was stationed at Tours. The efficient work of this unit in caring for three thousand beds merits high commendation. The first convoy of returned wounded soldiers to reach the hospital arrived in July, where they remained until reassigned to army hospitals. In August it was necessary to give up two entire wards to the treatment of a second convoy. The West Department was turned over to the War Department as a part of the United States General Hospital Number 10. Altogether seven hundred sick and wounded soldiers and sailors were cared for at the Boston City Hospital during the war. During the summer of 1918, a training school for hospital apprentices was formed at the request of the Medical Department of the First Naval District, and a six weeks' course of theoretical and practical work in caring for patients was given to 225 men.

The war and the influenza epidemic have given the hospital opportunity for unusual service during the year. The first influenza patients were received early in September, and during September and October the hospital capacity was taxed to the utmost and the personnel tested almost beyond endurance. Between September and January, there were approximately 2300 cases, with 675 deaths. Many of the physicians and nurses became ill; two physicians, nine nurses, and four employees paid with their lives for the heroism exhibited throughout the hospital.

In spite of the extra demands upon the hospital during the year, its regular routine activities have been maintained with efficiency and devotion. The reconstruction of ward buildings E and A, completed October 1, have added two new wards. A total number of 17,506 patients were cared for during the year, of whom 5,935 received medical treatment, 6,686, surgical, and 1,951 gynecological and obstetrical care. There were 622 births during the year. Thirty-eight thousand and twenty-three persons were treated in the Out-Patient Department, 8,127 by the X-Ray Department, and 408 by the Vaccine and Serum Therapy Department. The hospital has at present a total capacity of 1,173 beds, of which 765 are in the hospital proper, 340 in the South Department, 24 in the Haymarket Square Relief Station, 10 in the East Boston Relief Station, and 34 in the Convalescent Home.

The work of the X-Ray clinic is increasing each month. The use of gas tubes has been entirely discarded, and only Coolidge tubes are being used. It is hoped that a bedside unit may be installed during the coming year for the examination of ward patients who cannot be safely transported to the X-Ray Department. The teaching facilities, especially in the fluoroscopic study of fractures and other cases, have been greatly improved.

The Department of Vaccine and Therapy has been prepared to carry out the preparation of convalescent serum for treatment of influenza pneumonia since November. In addition to the

administration of protective and curative treatment to 559 persons, and a total number of 2,757 out-patient clinic visits, the laboratory work has consisted of bacteriological diagnosis, preparation of vaccines and antigens for diagnosis and treatment, and a supply of solutions necessary for preparation of diarsenol. Research work was carried on with protective inoculation against lobar pneumonia.

The work of the Pathological Laboratory has been handicapped by the departure of its five trained medical men and three technical assistants into war service. The regular routine work has been carried on, however, although it has not been possible to finish any research work for publication.

The report of the hospital's Medical-Social Department, which was first organized in 1914, shows that this department has steadily increased its activities since that time. One thousand nine hundred and sixty-nine patients have been cared for in various ways during the past year. The Training School for Nurses completed last year its forty-first year. Sixty-probationers and nineteen college women from Vassar Training Camp were admitted in 1918, and thirty nurses were graduated. Twelve nurses have finished the obstetrical training given at the New England Hospital for Women and Children and two have finished the courses in Public Health Work.

In all departments, the Boston City Hospital has been taxed to the utmost during the past year. The courage and faithfulness with which its staff carried on its service under the most difficult conditions will be gratefully remembered in the history of the institution.

## MEDICAL NOTES.

AWARD OF THE REMINGTON MEDAL.—At the sixty-seventh annual meeting of the American Pharmaceutical Association held recently in New York City, the Remington Medal was awarded to Prof. James P. Beal. This medal is given annually to the member of the American Pharmaceutical Association who makes the most notable contribution toward the advancement of pharmacy.

RED CROSS AND FEDERAL AID FOR TEXAS.—The Red Cross has recently received a report from the Red Cross physician at Corpus Christi, Texas, stating that four thousand persons were homeless, one in fifty estimated dead, and that there was a property loss of ten million dollars. One train carrying supplies of food and clothing, doctors and nurses and relief workers has already arrived in the flood district, and another train and a government vessel is on the way with relief supplies.

MAJOR-GENERAL WILLIAM C. GORGAS.—It has been reported that Major-General William C. Gorgas, former Surgeon-General of the United States Army, has offered to assume technical directorship of the sanitation of Guayaquil, Ecuador, provided the money for the work is supplied by the municipality or the republic. He has been investigating the sanitary conditions in Central and South America, and is about to proceed to Piura, which is infected with yellow fever, at the request of the Peruvian authorities.

AMERICAN MOBILE HOSPITAL IN THE BALKANS.—A recent report from Bucharest states that wounded Rumanians and Hungarians have been treated in an American mobile hospital. This type of mobile hospital is known as the "auto-chair," and is carried on eighteen huge automobile trucks constructed for medical and surgical purposes during war time. It consists of automobile operating rooms, sterilizing equipment, a laboratory, a pure-water machine with an ice-making attachment, an x-ray car, electric light plant, steam heating plant, a blacksmith's repair shop, and a complete tent hospital which can be set up anywhere in about two hours and will accommodate more than four hundred wounded men.

The Hospital was built by the Red Cross for use on the West front, but did not arrive in Europe until after the signing of the armistice. It has been given to Queen Marie of Rumania by the American Red Cross and is under the command of Major J. B. Bayne of Chicago.

COURSE IN PUBLIC HEALTH NURSING.—An eight months' course in public health nursing and industrial nursing was begun at the School of Public Health Nursing, conducted by Simmons College and the Instructive District Nursing Association, on September 16. Twenty-four graduate nurses have enrolled in the public health course and two in the industrial nursing course. The latter is a new course which is

offered by a special arrangement with the Committee on Industrial Hygiene of Harvard University and will be open only to those graduate nurses who are also college graduates; nurses who complete it will receive certificates from Simmons College, and may also receive the degree of Bachelor of Science.

BEQUESTS TO HOSPITALS.—By the will of the late Almira Elliott of Haverhill, the sum of $1,000 was bequeathed to the Steven H. Gale Hospital of Haverhill and to the Anna Jacques Hospital of Newburyport.

STUDY OF INFLUENZA AT HARVARD UNIVERSITY.—It has been announced that exhaustive research into the causes, effects, and complications of influenza, together with their prevention and cure, will be carried on by the laboratories of Harvard University. This work has been made possible by a gift of $50,000 by a corporation which suffered losses during the epidemic last year. The greater part of this sum will be used by Dr. Milton Joseph Rosenau, Professor of Preventive Medicine and Hygiene of the Harvard Medical School, and a corps of assistants. The research will be carried on in connection with Dr. Rosenau's teaching in the medical school, and the students will have the benefit of his discoveries.

WARNING ABOUT INFLUENZA.—Dr. William A. Brooks, former acting surgeon-general of Massachusetts, has commented upon the warning which has been issued by Surgeon-General Blue of the United States Public Health Service. He is reported to have said that this warning should be heeded by the public and all health authorities, as past experiences have shown that epidemics are repeated for at least three years, growing less violent each year. He believes that conditions are less unfavorable than last year, for then the naval stations and training camps caused a concentration of men which led to a rapid spread of the disease. One of the causes for concern at the present time is the shortage of nurses, and appeals have been made by a number of institutions for applicants. Dr. Brooks is reported to have made the following statement:

"Persons suffering from a cold should take care of themselves as a preventive measure. They should at least remain indoors and call a physician. This precaution will protect the persons suffering from cold and others as well. By not calling in a physician and having the disease diagnosed, others are endangered. To keep the cases isolated should be the aim of all families in which there is a person ill with influenza. Grouping the cases in the last epidemic was the cause of the exceptionally high mortality.

"Preparedness will save a repetition of last year's heavy mortality. Health authorities should be so prepared that they can act just as soon as the epidemic appears in any community, and thus save the misery through which Boston, Massachusetts, and the country passed last year. The public should also play its part in case of the recurrence of the disease."

GIFT TO NOBLE HOSPITAL.—A gift of $1,000 has been made to the Noble Hospital by John Davis, a former resident of Westfield.

MEDICAL AID FOR RETURNED SOLDIERS AND SAILORS.—All Massachusetts posts of the American Legion have been notified that returned soldiers and sailors in need of medical attendance as a result of their service abroad are entitled to the aid of the Public Health Service, through its relations with the War Risk Insurance Bureau. The headquarters of District Number 1, all the New England States with the exception of Connecticut, is at 51 Cornhill, Boston, which is in charge of Surgeon W. W. King. Dr. King may appoint a local physician to care for cases in remote districts, as a representative of the Public Health Service.

ELECTION OF DR. JOSEPH B. HOWLAND.—Dr. Joseph B. Howland, administrator of the Peter Bent Brigham Hospital, has been elected president of the American Hospital Association, which is holding a convention in Cincinnati.

ANNIVERSARY MEETING OF THE STATE BOARD OF HEALTH.—The fiftieth anniversary of the formation of the State Board of Health which was to have been held on September 15 in Boston, has been postponed indefinitely because of the unsettled conditions in the city.

## BOSTON AND MASSACHUSETTS.

WEEK'S DEATH RATE IN BOSTON.—During the week ending September 20, 1919, the number of deaths reported was 147 against 491 last year, with a rate of 9.62 against 32.64 last year. There

were 27 deaths under one year of age against 60 last year.

The number of cases of principal reportable diseases were: Diphtheria, 4; scarlet fever, 32; measles, 7; whooping cough, 19; typhoid fever, 2; tuberculosis, 47.

Included in the above were the following cases of non-residents: Diphtheria, 3; scarlet fever, 7; whooping cough, 1; tuberculosis, 11.

Total deaths from these diseases were: Diphtheria, 1; whooping cough, 1; tuberculosis, 15.

Included in the above were the following non-residents: Whooping cough, 1; tuberculosis. 1.

Influenza cases, 15; last year, cases not reported; influenza deaths last year, 172.

### NEW ENGLAND NOTES.

War Relief Funds.—Contributions to New England War Relief funds have reached the following amounts:

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| French Orphanage Fund | $516,068.57 |
| Italian War Relief Fund | 302,916.55 |
| French Wounded Fund (for American Memorial Hospital) | 193,420.27 |

Bequests to Hospitals.—By the will of the late David E. Murphy of Concord, N. H., $1,000 was bequeathed to the Concord District Nursing Association, and $500 each to the Women's and Children's Memorial Hospital and the Margaret Pillsbury General Hospital of Concord.

Annual Meeting of Jefferson College Graduates.—The 14th annual meeting of the New England Association of the Graduates of Jefferson Medical College of Philadelphia was held at the Copley Square Hotel, Boston, Thursday, Sept. 18, 1919. The business meeting took place at 6.30 P.M. and the banquet at 8 P.M.

The meeting was called to order by President Eckley R. Storrs of Hartford, Conn., and, after reading the minutes of the previous meeting, which was held at Hartford, Conn., the following officers were elected for the ensuing year: President, Dr. E. Winfield Egan, Brockton, Mass.; Vice-President, Dr. W. T. Veal, Stonington, Conn.; Treasurer, Dr. Frank I. Payne, Westerly, R. I.; Secretary, Dr. Wallace P. MacCallum, Boston, Mass.

At the banquet Dr. John T. Farrell of Providence, R. I., acted as toastmaster and introduced the following speakers:

Prof. Randle C. Rosenberger, Professor of Hygiene and Bacteriology of Jefferson College. Subject: Jefferson Medical College of the Past, Present, and Future.

Dr. C. Allen Riley of Boston. Subject: The Treatment of Tuberculosis in the Different Sanatoria.

Dr. James A. Mansfield, Dorchester, Mass. Subject: Various Methods of Encouraging Alumni Enthusiasm.

Dr. James J. Goodwin, Clinton, Mass. Subject: Post-Graduate Work at Jefferson.

Dr. Wallace P. MacCallum of Boston. Subject: The Best Way to Keep Members of the Alumni Association in Close Touch with One Another.

Dr. E. Linden Mellus, Brookline, Mass. Subject: Jefferson Medical College in the Olden Days.

Dr. E. Winfield Egan, Brockton, Mass. Subject: Influenza and Its Treatment.

At 11 P.M. the banquet party adjourned, after voting to hold the next annual meeting at Providence, R. I.

## The Massachusetts Medical Society.

### NOTES FROM DISTRICT SOCIETIES.

Dr. John C. Lindsay, Lieut. M. C., U.S.N., has received his discharge and has been appointed assistant superintendent of the Norfolk County Hospital at South Braintree.

Dr. Marie S. Lindsay has resigned from the staff of the Worcester State Hospital.

Dr. Fred E. Jones of Quincy has been appointed consulting surgeon to the Norfolk County Hospital.

Dr. C. A. Sullivan of South Braintree has been appointed consulting physician to the Norfolk County Hospital.

Dr. Frederic B. M. Cady of Cambridge, Mass., has just been discharged from service and returned home September 26. He was overseas during the early part of the war, and for the past year has been at Fort Lee.

Dr. Clarence P. Curley has returned from service in the U. S. Navy and has resumed practice at 234 Commercial Street, Provincetown. He was on service with the Naval Aviation Corps in Paris and near Bordeaux, and was placed on the retired list with the rank of Past Assistant Surgeon.

NEW FEE SCHEDULE IN FALL RIVER.—At a largely attended meeting of the physicians of Fall River, held September 27, it was voted to adopt a schedule of fees now charged in Lawrence, Lowell, Brockton, Taunton, New Bedford, and other places. This schedule is as follows:

From 8 A.M. to 6 P.M., $3.00; from 6 P.M. to 10 P.M., $4.00; from 10 P.M. to 8 A.M., $5.00.

For a second patient in the same family an extra charge of not less than $1.00.

Consultation with another physician, $5.00.

Advice given by telephone, $1.00.

Ordinary visit at the office, $2.00.

The above prices went into effect October 1. Some of the doctors have been charging these fees for some time and the adoption of the new schedule means that all the doctors will now charge the same fees.

## Correspondence.

### FARMING WITHOUT RUM IN 1829.

Cambridge, Mass., September, 1919.

*Mr. Editor:—*

It is likely that some of the "Old Americans" (as eugenist Papenoe terms them) at least, readers of your JOURNAL, will be interested in this pioneer practical prohibition document from the New Hampshire of ninety years ago. In these present years of the great educative prohibition experiment it seems worth the while thus to consider that the fight began earlier than some people realize. And farming is distressingly thirsty work.

This is the document:

FOR THE SUPPRESSION OF THE USE OF ARDENT SPIRITS IN FARMING.

It is proposed to raise a fund for the purpose of excluding from farming the use of distilled spirits. The fund is to be distributed at the discretion of an awarding committee of the Hillsborough Agricultural Society to those who give satisfactory evidence at the next Cattle Show and Fair that they have done the labor of their farms through the season without the use of distilled spirits. The subscribers hereto agree to pay the sum affixed to their names to encourage and promote this desirable object.

(Subscribers may, if disposed, become competitors.)

(Signed)
Thomas Eaton
Abner Pittee, Jr.
Moses W. Eaton
Titus Brown
James W. Haseltine
David Lewis
John Gilson
Charles Guilot

(Endorsement.)

October 1, 1829, the above paid over to the Treasurer of the Hillsborough Agricultural Society and by him paid out in premiums.

Dr. Thomas Eaton was sixth in the line from John Eaton who came over, probably from Wiltshire, England, in the summer of 1639, and settled in Colchester, now Salisbury, Massachusetts. He was born in Hamstead, New Hampshire, Feb. 6, 1769. Dr. Cochrane in his "History of Francestown, New Hampshire," page 662, writes of him in part as follows:

"Dr. Eaton graduated at the Vermont Medical School and was in the practice of medicine eight years in Weare and Henniker, and thirty-two years in Francestown. He succeeded his father upon the Eaton, or 'Richardson,' place, and became one of the most progressive, practical, and successful farmers in New England. His farm was for a number of years the 'premium farm' of the town, and the results of his methods of agriculture are still visible in the fields tilled under his supervison. He was, moreover, a large-hearted man, liberal with those in his employ, of the prosperity of many of whom he was virtually the founder. He also won a place in the history of American farming as the introducer of the Spanish Merino sheep into this country, and he was among the foremost to prohibit the free use of liquor upon the farm, and was the champion of the first temperance reform in the town, in which good work he antedated some of the best men of his time by fully a quarter of a century. He married...." etc. (He had five children, and today has numerous descendants, including great-great-great-grandchildren, up and down the Pacific Coast as well as in this vicinity. He himself lived eighty-nine years.)

Dr. Eaton kept a diary for about ten years while he was a medical student and during the early years of his practice in Francestown and the surrounding just settling towns of Southern New Hampshire. This diary, begun in March, 1793, contains many curious facts and attitudes toward the science and art of medicine (as well as toward country life in general) a century and a quarter ago in New England.

The present annotator has Dr. Eaton's commission as Surgeon to the Twenty-sixth Regiment of New Hampshire Militia, signed by Governor John Taylor Gilman on December 20, 1798.

There must be much interesting medical biography more or less similar to this, stored away (and therefore virtually lost) in the home garrets of members of the ancient Massachusetts Medical Society. Why not, gentlemen, employ one of these relatively "healthy" afternoons, or even precious forenoons, in digging it out, editing the documents (it is a pleasant occupation), and sending them, either originals or copies, where they will be not only safe but useful? The "melting-pot" is a-boilin,' and attics sometimes burn.

GEORGE VAN NESS DEARBORN.

### SOCIETY NOTICE.

THE NEW ENGLAND WOMEN'S MEDICAL SOCIETY will meet in the Boston University building, Boylston Street, corner of Exeter, on Thursday, October 16, at 8 P.M. This meeting will take the form of a memorial to Dr. Sarah Bond Frasier. Different aspects of her life and work will be presented by the following speakers: Dr. Anna Richardson, Dr. Hannah G. Myrick, Dr. Marian Nute, Dean Bertha M. Boody, and Mrs. A. W. Goodnow.

ALICE H. BIGELOW, M.D., *Secretary.*

### RECENT DEATHS.

DR. HERBERT GRANVILLE LESLIE died, following an operation for appendicitis, at Newburyport, September 1, 1919, at the age of 48.

He was a native of Amesbury and a graduate of Harvard Medical School in 1899. At the time of his death he was secretary of the Amesbury Board of Health and an active member of the Essex North District Medical Society. His widow, who was Miss Blanche Hardy, survives him.